

1. An apparatus comprising:

a flexible substrate to which a plurality of light sources are fixed;

a flexible substrate housing in which the flexible substrate is located;

wherein the flexible substrate is comprised of a peripheral region and a center region;

and further comprising a flexing device for flexing the flexible substrate by applying pressure to the center region of the flexible substrate to cause the flexible substrate to deform;

and wherein in a first state when the flexible substrate is not deformed by the flexing device, each of the plurality of light sources emits light which is concentrated in a first direction;

and wherein in a second state when the flexible substrate has been deformed by the flexing device, at least one of the plurality of light sources emits light which is concentrated in a second direction which differs from the first direction; and

wherein the flexible substrate housing is comprised of a removable holder and a case;

wherein the flexing device is comprised of the removable holder and the case;

and wherein the removable holder can be connected onto the case; and

and wherein the connecting of the removable holder onto the case can cause the flexible substrate to deform.

2. The apparatus of claim 1 and wherein

the removable holder can be connected to the case by variably tightening the removable holder to the case to thereby apply a variable amount of pressure to the flexible substrate and a corresponding variable amount of deformation of the flexible substrate.

3. The apparatus of claim 1 and wherein

the removable holder is in the form of a cover and the case is in the form of a flashlight case.

4. The apparatus of claim 2 wherein

the removable holder when tightened causes the center region of the flexible substrate to be forced upwards by a surface of a battery.

5. The apparatus of claim 4 wherein

the removable holder when screwed tightly causes the center region of the flexible substrate to be forced upwards by a terminal of a battery.

6. An apparatus comprising:

a flexible substrate to which a plurality of light sources are fixed;

a flexible substrate housing in which the flexible substrate is located;

wherein the flexible substrate is comprised of a peripheral region and a center region;

and further comprising a flexing device for flexing the substrate by applying pressure to the center region of the flexible substrate to cause the flexible substrate to deform;

wherein in a first state when the flexible substrate is not deformed by the flexing device each of the plurality of light sources emits light which is concentrated in a first direction;

wherein in a second state when the flexible substrate has been deformed by the flexing device at least one of the plurality of light sources emits light which is concentrated in a second direction which differs from the first direction;

and wherein the flexible substrate is comprised of a center electrical terminal located at the center region of the flexible substrate and wherein the flexing device makes electrical contact with the center electrical terminal of the flexible substrate when the flexing device applies pressure to the center region of the flexible substrate.

7. The apparatus of claim 6 wherein

each light source on the flexible substrate has a first terminal and a second terminal,

and each first and second terminal is electrically connected to its own first and second conductive material on the flexible substrate, respectively;

wherein the first conductive materials for all the light sources are electrically connected to a center conductive material on the flexible substrate;

wherein the second conductive materials for all the light sources are electrically connected to a peripheral conductive material on the flexible substrate;

and wherein by applying a positive terminal of a signal source to the center conductive material and by applying a negative terminal of the signal source to the peripheral conductive material, the plurality of light sources can be turned on.

8. The apparatus of claim 6 wherein

each light source on the flexible substrate has a first terminal and a second terminal,

and each first and second terminal is electrically connected to its own first and second conductive material on the flexible substrate, respectively;

wherein the first conductive materials for all the light sources are electrically connected to a center conductive material on the flexible substrate;

wherein the second conductive materials for all the light sources are electrically connected to its own separate distinct peripheral conductive material on the flexible substrate;

and wherein by applying a positive terminal of a signal source to the center conductive material and by applying a negative terminal of the signal source to the appropriate peripheral conductive material, a particular light source can be turned on.

9. The apparatus of claim 6 wherein

the plurality of light sources are light emitting diodes.

10. An apparatus comprising:

a flexible substrate to which a plurality of light sources are fixed;

a flexible substrate housing in which the flexible substrate is located;  
wherein the flexible substrate is comprised of a peripheral region and a center region;  
and further comprising a flexing device for flexing the substrate by applying pressure to the center region of the flexible substrate to cause the flexible substrate to deform;  
wherein the flexible substrate housing applies pressure to the peripheral region of the flexible substrate in a substantially opposite direction to the pressure being applied to the center region and while pressure is being applied to the center region of the flexible substrate;  
and wherein in a first state when the flexible substrate is not deformed by the flexing device each of the plurality of light sources emits light which is concentrated in a first direction;  
and wherein in a second state when the flexible substrate has been bent by the flexing device at least one of the plurality of light sources emits light which is concentrated in a second direction which differs from the first direction; and  
wherein the flexing device is comprised of a battery having a first terminal, wherein the first terminal of the battery applies pressure to the center region of the flexible substrate to cause the flexible substrate to deform.

11. An apparatus comprising:

a flexible substrate to which a plurality of light sources are fixed;  
a flexible substrate housing in which the flexible substrate is located;  
wherein the flexible substrate is comprised of a peripheral region and a center region;  
and further comprising a flexing device for flexing the substrate by applying pressure to the center region of the flexible substrate to cause the flexible substrate to deform;  
and wherein in a first state when the flexible substrate is not deformed by the flexing device, each of the plurality of light sources emits light which is concentrated in a first direction;  
and wherein in a second state when the flexible substrate has been bent by the flexing device at least one of the plurality of light sources emits light which is concentrated in a second direction which differs from the first direction;

wherein each light source on the flexible substrate has a first terminal and a second terminal, each first and second terminal is electrically connected to its own first and second conductive material on the flexible substrate, respectively;

wherein the first conductive materials for all the light sources are electrically connected to a center conductive material on the flexible substrate;

wherein the second conductive materials for all the light sources are electrically connected to a peripheral conductive material on the flexible substrate;

and wherein by applying a positive terminal of a signal source to the center conductive material and by applying a negative terminal of the signal source to the peripheral conductive material, the plurality of light sources can be turned on.

12. An apparatus comprising:

a flexible substrate to which a plurality of light sources are fixed;

a flexible substrate housing in which the flexible substrate is located;

wherein the flexible substrate is comprised of a first region and a second region;

and further comprising a flexing device for flexing the substrate by applying pressure in a first direction to the second region of the flexible substrate and simultaneously applying pressure in a second direction to the first region of the flexible substrate, wherein the first direction is substantially opposite the second direction, to cause the flexible substrate to deform;

and wherein in a first state when the flexible substrate is not deformed by the flexing device each of the plurality of light sources emits light which is concentrated in a third direction;

and wherein in a second state when the flexible substrate has been deformed by the flexing device at least one of the plurality of light sources emits light which is concentrated in a fourth direction which differs from the third direction; and

wherein the flexible substrate housing is comprised of a removable holder and a case;

wherein the flexing device is comprised of the removable holder and the case;

and wherein the removable holder can be connected to the case; and

and wherein the connecting of the removable holder onto the case can cause the flexible substrate to deform.

13. A lighting apparatus comprising:

a substrate;

first, second, third and fourth light emitting diodes each of which is fixed to the substrate;

and

a first housing in which the substrate is located;

wherein each of the first, second, third and fourth light emitting diodes emit light having an intensity and each is arranged to project light on to a surface from the first housing;

wherein the substrate has a first circuit and a second circuit;

wherein each of the first and second light emitting diodes is connected to the first circuit and the first circuit can vary intensity of light from either the first light emitting diode or the second light emitting diode;

wherein each of the third and fourth light emitting diodes is connected to the second circuit and the second circuit can vary intensity of light from either the third light emitting diode or the fourth light emitting diode;

wherein each of the first and second light emitting diodes can have its light intensity varied independently from the light intensities of the third and fourth light emitting diodes;

wherein each of the first and second light emitting diodes emits light of a first color;

wherein each of the second and third light emitting diodes emits light of a second color;

wherein the first color and the second color are different;

and wherein the second color is generated by white light emitting diodes.

14. The lighting apparatus of 13 wherein

the first color is generated by yellow light emitting diodes

15. The lighting apparatus of 13 wherein

the first color is generated by amber light emitting diodes

16. The lighting apparatus of 13 wherein

the first color is generated by red light emitting diodes.

17. The lighting apparatus of claim 14 wherein

varying the light intensity emitted by any of the first, second, third, or fourth light emitting diodes changes the color temperature of the light projected on to a surface.

18. The lighting apparatus of claim 15 wherein

varying the light intensity emitted by any of the first, second, third, or fourth light emitting diodes changes the color temperature of the light projected on to a surface.

19. The lighting apparatus of claim 16 wherein

varying the light intensity emitted by any of the first, second, third, or fourth light emitting diodes changes the color temperature of the light projected on to a surface.

20. The lighting apparatus of claim 13 further comprising

a second housing; and

an electrical component located within the second housing.

21. The lighting apparatus of claim 20 wherein

the electrical component is a battery.

22. The lighting apparatus of claim 20 further comprising

a yoke; and

wherein the yoke is mounted for rotation relative to the first and second housing.

23. The lighting apparatus of claim 22 wherein

the rotation of the first housing relative to the second housing is caused by remote control.



24. The lighting apparatus claim 23 wherein

a communications line is connected to the second housing.

25. The lighting apparatus of claim 22 further comprising

ventilation holes; and

wherein the ventilation holes are located in the substrate in proximity to any of the first and second or third and forth light emitting diodes.

26. The lighting apparatus of claim 25 further comprising

a fan;

and wherein the fan forces air through the ventilation holes.

27. The lighting apparatus of claim 13 further comprising

a variable filter.

28. The lighting apparatus of claim 27 wherein

the variable filter is a liquid crystal emulsion filter.

29. The lighting apparatus of claim 27 wherein

the filter is mounted to the first housing wherein each of the first, second, third and fourth light emitting diodes emit light in a direction passing through the filter.

30. The lighting apparatus of claim 28 further including

a communications line;

and wherein the variable filter can be varied by communications received over the communications line.

31. The lighting apparatus of claim 13 wherein

the substrate is a flexible substrate.

32. The lighting apparatus of claim 13 wherein

the substrate is a curved substrate

33. A lighting apparatus comprising:

a substrate;

a first housing, in which the substrate is located;

a light emitting diode mounted to the substrate;

a variable filter;

wherein the light emitting diode emits light; and

wherein the light emitted from the light emitting diode is projected on to a surface from the first housing through the variable filter.

34. The lighting apparatus of claim 33 wherein

the variable filter is a liquid crystal filter.

35. A lighting apparatus comprising:

a substrate;

first, second, third, fourth, fifth and sixth light emitting diodes each of which is fixed to the substrate;

a first housing wherein the substrate is located;

wherein each of the first, second, third, fourth, fifth and sixth light emitting diodes emits light having an intensity and each is arranged to project its light on to a surface from the first housing;

wherein the substrate has first, second, third, fourth, fifth and sixth circuits;

wherein the first light emitting diode is connected to the first circuit and the first circuit can vary the intensity of light emitted by the first light emitting diode;

wherein the second light emitting diode is connected to the second circuit and the second circuit can vary the intensity of light emitted by the second light emitting diode;

wherein the third light emitting diode is connected to the third circuit and the third circuit can vary the intensity of light emitted by the third light emitting diode;

wherein the fourth light emitting diode is connected to the fourth circuit and the fourth circuit can vary the intensity of light emitted by the fourth light emitting diode;

wherein the fifth light emitting diode is connected to the fifth circuit and the fifth circuit can vary the intensity of light emitted by the fifth light emitting diode;

wherein the sixth light emitting diode is connected to the sixth circuit and the sixth circuit can vary the intensity of light emitted by the sixth light emitting diode;

wherein each of the first, second, third, fourth, fifth and sixth light emitting diodes light intensities which can be varied independently of each of the other light emitting diodes intensities;

wherein the first, second, third, fourth, fifth and sixth light emitting diodes emit light of first, second, third, fourth, fifth and sixth wavelengths, respectively;

wherein the wavelengths of the first, second, third, fourth, fifth and sixth light emitting diodes are different from one another;

and wherein each of the first, second, third, fourth, fifth and sixth wavelengths generates a different color.

36. The lighting apparatus of claim 35 wherein

at least one of the first, second, third, fourth, fifth and sixth light emitting diode emits light of the color white.

37. The lighting apparatus of claim 35 further comprising

a second housing;

and an electrical component which is located within the second housing.

38. The lighting apparatus of claim 37 wherein

the electrical component is a battery.

39. The lighting apparatus of claim 37 further comprising

a yoke;

and the yoke is mounted, so that the yoke can rotate with respect to the first and second housing.

40. The lighting apparatus of claim 39 wherein

the rotation of the first housing relative to the second housing is caused by remote control.

41. The lighting apparatus claim 40 wherein

a communications line is connected to the second housing.

42. The lighting apparatus of claim 35 further comprising

ventilation holes and the ventilation holes are located in the substrate in proximity to any of the first, second, third, fourth, fifth or sixth light emitting diodes.

43. The lighting apparatus of claim 42 further comprising

a fan;

wherein the fan forces air through the ventilation holes.

44. The lighting apparatus of claim 35 further comprising

a variable filter.

45. The lighting apparatus of claim 44 wherein

the variable filter is a liquid crystal emulsion filter.

46. The lighting apparatus of claim 44

wherein the first, second, third, fourth, fifth and sixth light emitting diodes emit light in a direction passing through the filter.

47. The lighting apparatus of claim 44 further including

a communications line and wherein the variable filter can be varied by communications received over the communications line.

48. The lighting apparatus of claim 35 wherein

the substrate is a flexible substrate.

49. The lighting apparatus of claim 35 wherein

the substrate is a curved substrate

50. A lighting apparatus comprising:

a substrate;

first, second, third, fourth, fifth and sixth light emitting diodes, each of which is fixed to the substrate;

a first housing in which the substrate is located;

wherein each of the first, second, third, fourth, fifth and sixth light emitting diodes emit light having an intensity and each is arranged to project its light on to a surface from the first housing;

wherein the substrate has first, second, third, fourth, fifth and sixth circuits;

wherein the first light emitting diode is connected to the first circuit and the first circuit can vary the intensity of light emitted by the first light emitting diode;

wherein the second light emitting diode is connected to the second circuit and the second circuit can vary the intensity of light emitted by the second light emitting diode;

wherein the third light emitting diode is connected to the third circuit and the third circuit can vary the intensity of light emitted by the third light emitting diode;

wherein the fourth light emitting diode is connected to the fourth circuit and the fourth circuit can vary the intensity of light emitted by the fourth light emitting diode;

wherein the fifth light emitting diode is connected to the fifth circuit and the fifth circuit can vary the intensity of light emitted by the fifth light emitting diode;

wherein the sixth light emitting diode is connected to the sixth circuit and the sixth circuit can vary the intensity of light emitted by the sixth light emitting diode;

wherein each of the first, second, third, fourth, fifth and sixth light emitting diodes light intensities can be varied independently of each of the other light emitting diodes intensities;

and wherein the first, second, third, fourth, fifth and sixth light emitting diodes all emit light of a first color.

51. The lighting apparatus of claim 50 further comprising

a seventh light emitting diode and wherein the seventh light emitting diode emits light of a second color different than the first color.

52. The lighting apparatus of claim 50 wherein

the first color is white.



53. The lighting apparatus of claim 51 wherein

the second color is amber.

54. The lighting apparatus of claim 51 wherein

the second color is yellow

55. The lighting apparatus of claim 51 wherein

the second color is red.

56. The lighting apparatus of claim 51 wherein

the intensity of the first color is varied to change the color temperature of the light emitted by at least one of the first, second, third, fourth, fifth, or sixth light emitting diodes.

57. The lighting apparatus of claim 51 wherein

the intensity of the second color is varied to change the color temperature of the light emitted by at least one of the first, second, third, fourth, fifth, or sixth light emitting diodes.

58. The lighting apparatus of claim 50 further comprising

a second housing;

and an electrical component located within the second housing.

59. The lighting apparatus of claim 58

wherein the electrical component is a battery.

60. The lighting apparatus of claim 58 further comprising

a yoke; and

wherein the yoke is mounted, so that the yoke can rotate with respect to the first and second housings.

61. The lighting apparatus of claim 60 wherein

the rotation of the first housing relative to the second housing is caused by remote control.

62. The lighting apparatus claim 61

wherein a communications line is connected to the second housing.

63. The lighting apparatus of claim 50

further comprising ventilation holes and the ventilation holes are located in the substrate in proximity to the first, second, third, or forth light emitting diodes.

64. The lighting apparatus of claim 63 further comprising

a fan;

and wherein the fan forces air through the ventilation holes.

65. The lighting apparatus of claim 50 further comprising

a variable filter.

66. The lighting apparatus of claim 65 wherein

the variable filter is a liquid crystal emulsion filter.

67 . The lighting apparatus of claim 65 wherein

the first, second, third, fourth, fifth and sixth light emitting diodes emit light in a direction passing through the filter.

68. The lighting apparatus of claim 65 further including

a communications line and wherein the variable filter can be varied by communications

received over the communications line.

69. The lighting apparatus of claim 50 wherein

the substrate is a flexible substrate.

70. The lighting apparatus of claim 50 wherein

the substrate is a curved substrate

71. The lighting apparatus of claim 50 wherein

the first color is ultraviolet.

72. The lighting apparatus of claim 51 wherein

the second color is ultraviolet

73. A lighting device comprising:

a first housing;

a plurality of light emitting diodes disposed within the first housing, at least two of the light emitting diodes being a different color, and the light emitting diodes having a high intensity for controlling the illumination of an area, and having respective basic directions of light energy

emission;

a second housing; and

a power applying component disposed in the second housing;

wherein the power applying component is electrically coupled to the light emitting diodes for applying power to the light emitting diodes; and

wherein the first housing is rotationally mounted to the second housing for revolving the first housing relative the second housing to vary the basic directions of light energy emission relative to the second housing.

74. The lighting device of claim 73 further comprising a flexible substrate, wherein:

the first housing comprises a threaded holder;

the light emitting diodes are mounted on the flexible substrate;

the flexible substrate is mounted in the threaded holder;

the second housing comprises a threaded case;

the power applying component comprises a battery; and

the threaded holder engages the threaded case and is manually rotatable relative to the case for varying the basic directions of light energy emission relative to the case by deformation of the flexible substrate.

75. The lighting device of claim 73 further comprising

a flexible substrate and an actuator coupled to the flexible substrate, wherein:

the first housing comprises a lamp housing;

the light emitting diodes are mounted on the flexible substrate;

the flexible substrate is mounted in the lamp housing;

the second housing comprises an electronics housing;

the power applying component comprises an internal power supply; and

the actuator is controllable for varying the basic directions of light energy emission relative to the electronics housing by deformation of the flexible substrate.

76. The lighting device of claim 73 further comprising

a yoke, wherein the yoke is mounted for rotation to the first housing;

wherein the first housing comprises a lamp housing;

wherein the yoke is mounted for rotation to the second housing;

the second housing comprises an electronics housing; and

the power applying component comprises an internal power supply;

77. The lighting device of claim 76 further comprising

a communications line and the communications line is connected to the second housing.

78. An apparatus comprising:

a housing having a optically transparent area thereof;

a substrate disposed in the housing, the substrate having a plurality of individually controllable circuits; and

first, second, third, fourth, and fifth light emitting diodes respectively fixed to the circuits of the substrate for directing light through the optically transparent area;

wherein the first, second, third, fourth, and fifth light emitting diodes have respectively independently variable light intensities;

wherein the first, second, third, fourth, and fifth light emitting diodes emit light of first, second, third, fourth, and fifth wavelengths, respectively; and

wherein the first, second, third, fourth, and fifth wavelengths produce respectively different colors.